Cisco Visual Networking Index Usage Q&A

October 25, 2010

Q. What is the Cisco VNI Usage study?

A. Cisco® Visual Networking Index (VNI) Usage research provides quantitative insights into current activity on service provider networks and qualitative samples of consumers' online behavior. In this cooperative program, more than 20 of our global service provider customers voluntarily share anonymous, aggregate data with Cisco to analyze current network usage trends and gauge future infrastructure requirements. Participating service providers serve millions of subscribers around the world. They represent the mobile, wired network, and cable segments throughout North America, Latin America, Europe, the Asia-Pacific theatre and various emerging markets. This research provides actual network trends that are used to validate our Cisco VNI Forecast (a methodology for future IP network and Internet growth). Cisco VNI Usage is not a direct data source for the Cisco VNI Forecast, but it is a valuable verification resource that helps to shape and adjust the connection-centric methodology that serves as the foundation of the Cisco VNI Forecast.

Q. How does Cisco VNI Usage data compare with Cisco VNI Forecast projections?

A. Cisco VNI Usage data is acquired through a direct measurement methodology, while the Cisco VNI Forecast is an estimate derived from a model that is based on broadband connections (fixed and mobile) and application adoption (IP voice, video, and data). The Cisco VNI Forecast approach provides a comprehensive categorization of traffic types and their respective growth rates (for example, Internet, managed IP, and mobile data), while Cisco VNI Usage results represent "real- world" insight into current global traffic patterns and trends based on aggregate service provider network data. In general, Cisco found that VNI Usage data aligns closely with the company's previously published forecast data for the same period (3QCY10) and suggests IP network and Internet growth trajectories that are consistent with the company's longer-term estimates (through 2014).

While the Cisco VNI Forecast and VNI Usage efforts are intentionally distinct and designed to provide complementary information, the VNI Usage results do confirm many of the projections set forth by the VNI Forecast model. For example, Table 1 shows Cisco VNI Forecast and VNI Usage data for application traffic share by hour.

Table 1. Cisco VNI Forecast and Usage Data Compared: Application Traffic Share by Hour, 3Q10

	VNI Forecast	VNI Usage
GB of Internet traffic per month per connection in 2009	11.8	11.4*
GB of Internet traffic per month per connection in 2010	15.6	14.9*
Growth in Internet traffic per month per connection from 2009 to 2010	31.5%	30.7%*
Overall Internet traffic growth rate for all users	42.0%	N/A**

** The comparatively slight differences between VNI Usage results and VNI Forecast projections can be attributed to the source of the contributed VNI Usage data (a random sampling of more than 20 global service providers), while the VNI Forecast effort is designed to be a comprehensive, worldwide model.*

*** The Cisco VNI Usage Study is not designed to provide a growth rate for all global users. There is no comparative metric.*

Source: VNI Usage, 2010

The Cisco VNI Usage results also provide qualitative confirmation of many of the trends projected by the VNI Forecast model. While many of the application categories are not strictly comparable, Table 2 describes additional results that we consider consistent between the Cisco VNI Forecast and Usage projects.

Table 2. Additional Consistencies Between the Cisco VNI Forecast Projections and the VNI Usage Results

VNI Forecast Projections	VNI Usage Results
By the end of 2010, online video traffic will exceed peer-to-peer (P2P) traffic.	The subset of video traffic comprised of flash, streaming video and Internet TV makes up 26 percent of broadband traffic, compared to the 25 percent of traffic that P2P represents.
Live video via Internet will reach 4 percent of consumer Internet traffic by the end of 2010.	Streaming video via P2P—the majority of which is live TV content—is 5 percent of all traffic.
Video calling will exceed 1 percent of consumer Internet traffic by the end of 2010.	Voice and video communications traffic (voice over IP [VoIP], voice and video over instant messaging) has reached 2 percent of all traffic.
Passive networking has the potential to rival active Internet use as a traffic driver.	Ten of the top 50 sites were associated with software updates and downloads

Source: VNI Usage, 2010

Q. How is Cisco VNI Usage data collected?

A. Cisco receives anonymous, aggregate network usage data that is submitted from global service providers who have chosen to participate in the Cisco VNI Usage program. Participating service providers collect their network usage data using Cisco Service Control Engines (SCEs) that are strategically installed at network peering points and broadband hubs. Standard network usage reports are submitted to Cisco on a monthly basis (Cisco does not own or operate the equipment in any participants' network). The Cisco SCEs operate in anonymous subscriber mode, and submitted data does not include any IP or MAC addresses, or any other personally identifiable information. The Cisco SCEs used for this program do not include policy control modules, and therefore the equipment is not able to apply different policies to different types of traffic. The equipment is configured exclusively for passive reception.

Under the terms of the Cisco VNI Usage partner program, Cisco may not share the identities of any service provider participants or publish network data from any single participant. The data will always be represented in anonymous, aggregate form.

Q. What is Cisco's policy regarding subscriber privacy?

A. The network usage data submitted as part of the Cisco VNI Usage program is both anonymous and aggregate. Anonymous data is distinct from "anonymized" data, which is raw data in which individual IP addresses have been replaced with random identifiers. Anonymous data, on the other hand, contains no raw usage records, only aggregate statistics describing those records.

Table 3 shows examples of the types of information included in and excluded from the data collection.

Table 3. Types of Information Included and Excluded in the Cisco VNI Usage Data Collection Effort

Included	Excluded
The total traffic volume associated with video usage	The identity of subscribers who watched video
The top URLs by volume and number of hits	The identity of subscribers who visited the top URLs
The number of subscribers who watched video and the number of subscribers who used file-sharing	The number of subscribers who generated both video and file sharing traffic
The number of subscribers active at any given time	The IP addresses, MAC addresses, or subscriber IDs of active subscribers

Q. What period of time does the current Cisco VNI Usage data cover?

A. Cisco has been collecting aggregate network usage data from some participating service providers for more than a year. The results of the current research include data from all of the program participants (more than 20 service providers) during the third quarter of calendar year 2010 (July, August, and September).

Q. What types or sources of IP/Internet traffic are not included in Cisco VNI Usage data?

A. Enterprise/large business and university traffic is not included in Cisco VNI Usage data. This data cannot be reliably captured from SP network participants. The Cisco VNI Usage study captures broadband network data only. Some businesses and universities may have higher speed or alternate networks (e.g., optical) that are not represented in our current data.

For More Information

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